38TH TRENTON COMPUTER FESTIVAL
TALKS AND WORKSHOPS

10:15 am to 11:10 am

Room AR154
C# .NET Programming
Donald Hsu, Dominican College
Abstract: With all the outsourcing and downsizing, you may think that there are no programming jobs, but in fact the opposite is true! For financial computing, web design, iPhone apps and gaming, Java has been the programming language of choice. Four million Java programmers did applications for cell phones, PDAs, web servers and databases. Since 2004, C# (C sharp) is quickly gaining momentum as a preferred language. Dice.com lists 2,289 jobs for Java, and 1,113 jobs for C# (up from 830 last year)! Salaries range from $75,000 to $120,000. C# .NET Programming will be discussed and "hands-on" exercises demonstrated. Show up and learn!
Bio: Donald Hsu, PhD is a professor at Dominican College and President of the Chinese American Scholars Association (CASA). He has trained/taught 70 subjects, Accounting to Unix, at 37 firms to >10,400 clients/students at AT&T, Bank America, Goldman Sachs, IBM, JPMChase, Mercedes Benz, Microsoft, Morgan Stanley, Sony, Toyota, Verizon, etc. Since 2006, CASA organized and ran 13 successful E-Leader conferences in Asia and Europe, www.g-casa.com. He has traveled to 71 countries in Africa, Asia, and Europe for international business. His profile along with 3,760 other contacts can be found at www.linkedin.com/pub/donald-hsu/0/15/A14.

Room PHY117
Provisional Patents
Hay Yeung Cheung, Myers Wolin, LLC
Abstract: Since June 8, 1995, the United States Patent and Trademark Office (USPTO) has offered inventors the option of filing a provisional application for patent which was designed to provide a lower-cost first patent filing in the United States. Applicants are entitled to claim the benefit of a provisional application in a corresponding non-provisional application filed not later than 12 months after the provisional application filing date. This workshop will guide you through the steps of preparing a provisional patent application for your invention.
Bio: Hay Yeung Cheung is a senior associate at Myers Wolin, LLC in Morristown, New Jersey. He is a Registered Patent Attorney with the United States Patent and Trademark Office, and is admitted in California, District of Columbia, and the Supreme Court of the United States.

Room AR144
Autonomous UAV
Dan Bluman, Kevin Mittler, Cristopher Kedmenec & Jervais Thomas, The College of New Jersey
Abstract: The design and fabrication of a UAV that is capable of operating with no human interaction will be presented. This UAV is capable of independently maneuvering to predefined GPS coordinates of a target person. It can then recognize and follow the target person, streaming visual information and telemetric data to a base station. The UAV uses a quadrotor design with a lightweight frame, a lithium-polymer battery, four motors and four propellers. It also employs a PIC microcontroller, several attitude and object avoidance sensors, and a wireless transceiver for control/communication. It has a camera paired with a cutting-edge processor dedicated to its computer vision subsystem for human recognition. This work is part of a TCNJ senior project.
Bio: The project team consists of Daniel Bluman, electrical Engineering; Kevin Mittler, electrical engineering; Cristopher Kedmenec, computer engineering; Jervais Thomas, electrical engineering. All members of the team are seniors with the Electrical/Computer Engineering Department at TCNJ.

Room AR148
Discover iPad- The Perfect Learning Companion
Dave Marra, Apple Inc.
Abstract: See how the new iPad is changing the learning landscape, providing students with instant access to thousands of educational apps in all grade levels and all subject areas. Designed to be thin and light enough to take anywhere, the new iPad is the best way to experience the web, email, photos, video and textbooks. With a large, high-resolution Retina display, an incredibly responsive Multi-Touch screen and an amazingly powerful Apple-designed chip, iPad isn't just the best device of its kind, it's a whole new kind of device. We'll also explore iBooks

Author, to create and publish amazing Multi-Touch textbooks for iPad, and iTunes U, to design and distribute complete courses featuring audio, video, books, and other content for iPad. Discover the new iPad today!
Bio: As a Senior Systems Engineer for Apple, Dave Marra has conducted thousands of technology presentations, keynote addresses and workshops for schools, Mac and PC user groups, businesses and other professional organizations across the United States and Canada. Certified as both an Apple Certified Technical Coordinator and an Apple Certified Systems Administrator, his specialty areas include digital multimedia, internet technologies, accessibility and Mac/PC integration. For more information about Dave, please visit his web site at www.marrathon.com.

Room AR102
TCNJ Micromouse
Jake Eger, Andrew Macfarlane and Matthew Diet, TCNJ
Abstract: A micromouse is a small autonomous robot that must be able to navigate a maze. The design of a micromouse has been a one of The TCNJ School of Engineering's recurring senior projects for years. Many project teams have placed first in the IEEE's Region 1 Micromouse Competition, and those who did not have still placed well. In the IEEE competition, the mouse with the fastest time from start to finish is the winner. This talk will discuss this year's micromouse. The primary goal of the design team is to have the mouse solve the maze efficiently, and secondarily achieve the best speed.
Bio: Jake Eger is a TCNJ senior computer engineering major and the Micromouse project manager. Jake has developed the power system and the drive train for the micromouse. Andrew Macfarlane is a TCNJ senior electrical engineering major. He has focused on the sensors, microcontroller, and physical design of the mouse. Matthew Dietz is a TCNJ senior computer engineering major. Matt has developed the software for the mouse, which includes a mouse simulator as well as the code on the microcontroller.

Room AR114
Getting Started: PCs/Pads, Internet & Digital Photography
Herman Hinitz, H. Hinitz Photography
Abstract: This session is designed for the beginner, people who would like to use a personal computer/pads for word processing, electronic spreadsheets, graphics, Internet (browsers), databases, antivirus programs, firewall programs, digital photography, etc., but are unsure how or where to begin. Appropriate examples would be used with MS Office, etc. Also see a digital photography display in the building lobby area for related information and examples.
Bio: Dr. Hinitz has used diversified software and hardware in research, consulting, publications, and digital photography. Some of his work has been included in commercially available books, professional publications, fine art collections, and gift shops. He is a long time supporter of the Trenton Computer Festival.

Room PHY116
GPS Secrets 2013
C. Lewart, Freelance Writer
Abstract: There is more to a GPS than a pleasant voice telling you to turn right on Cedar Street, and a color display of adjacent ramps and intersections. I will try to cover the following subjects in my talk: 1) Technical background and implementation of current GPS systems, 2) How the user location is derived from precise atomic clocks on satellites, and from an imprecise clock in your GPS receiver, 3) Capturing and analyzing the data stream coming from the GPS, and sending commands to the GPS, 4) Secret key codes that allow changing of base maps on the GPS, a practice frowned upon by GPS manufacturers, 5) How GPS enabled devices, including cell phones, impact on your privacy, 6) Geocaching, a modern treasure hunt, using a GPS, 7) Review of currently available GPS equipment, and 8) How to modify the built-in GPS vocabulary.
Bio: Cass Lewart is an electrical engineer, a long time hobbyist, author of several books on computer programming, modems and programmable calculators. He has also written many project articles in popular electronics magazines. Cass and Ruth are joint recipients of the 2005 Hobbyist of the Year award from the Amateur Computer Group of New Jersey. Cass is a graduate of the Swiss Federal Institute of Technology and worked at Bell Labs and Unisys.

Room AR124 (10:15 am to 12:15 pm)
Workshop on Developing Apps for Android Phones and Tables
Barry Burd, Drew University

Abstract: See the Android app development process from beginning to end. Learn the basics steps for coding an app, preparing an app for publication on the Android market, and deploying the app on the market.
Bio: Dr. Barry Burd is a professor of Mathematics and Computer Science at Drew University in Madison, NJ. He is the author of several articles and books, including *Java For Dummies* and *Android Application Development All-in-One For Dummies*, both from Wiley Publishing. He received an M.S. degree in Computer Science at Rutgers University and a Ph.D. in Mathematics at the University of Illinois.

Room AR106
Arduino Workshop (all day)
Bill French, Rick Anderson, Brian Boccardi and Phil Gillhaus, FUBAR Labs
Abstract: A day long Arduino tutorial and users meeting. We will start out with an intro to Arduino, followed by a beginners' Arduino hands on class. We then have an open *hack* period and finally have a developers' round table. Plans also include a presentation on a Makerbot.
Bio: Bill French is the President of Fair Use Building and Research (FUBAR) Labs, a *hackerspace* in Highland Park, NJ. Besides hacking, Bill's interests include silk screening, electronics, Arduino, Netduino, CNC Controls, and circuit board creation. He has an A.S. in Computer Science and is the Director of Telecommunications, Network, and Support Services for the Princeton Theological Seminary.
Rick Anderson has worked to provide programs on soldering, basic electronics, Arduino and 3D printing to the New Jersey community. Arduino is an Open Hardware project used by artists and engineers around the world. He is also part of the official Arduino testing team. In 2011, he participated in the Global Game Jam and created the first third party game for the Microtouch Open Hardware Game Platform, Heat Death, http://globalgamejam.org/2011/heat-death-microtouch.
Brian Boccardi has presented at TCF for many years. He is a member and trustee of FUBAR Labs, and holds the amateur radio callsign N2MPM. He works with the NJ state office of emergency management. He also teaches electronics, Arduino and soldering.
Phil Gillhaus is the Treasurer at FUBAR Labs, where he spends his time teaching classes and tinkering with electronics, micro-controllers, lasers, machine tools, and toy guns. Phil has provided instructional support for programs in computer literacy, web design, and course management software at Brookdale Community College and Rutgers University, and is currently working in the K-12 division of MAXIMUS.

Room AR156 (10:15 am to 12:15 pm)
OOP University: Introduction to Java (Workshop)
Michael Redlich, Amateur Computer Group of New Jersey
Abstract: Please bring your laptops to this workshop! This hands-on workshop will provide an introduction to the Java programming language plus review some intermediate concepts. Java is an object-oriented programming (OOP) language created by James Gosling at Sun Microsystems. Since knowledge of OOP is vital in the development of robust applications, the OOP paradigm will be introduced along with a brief discussion of the advantages of OOP over structured programming. Some Java keywords will be reviewed before introducing the Java class mechanism. You will have the opportunity to build a small, working Java application to demonstrate how the attributes of OOP are utilized. You will then build upon your application as each of the intermediate features (JavaBeans, exception handling, Java Generics, and Java Database Connectivity (JDBC)) is reviewed. If time allows, there will also be a brief introduction to the Java 2 Collections. [Prerequisites: Installation of Java Software Development Kit (JDK) 7, http://bit.ly/UuzFGN].
Bio: Michael Redlich is a Senior Research Technician at a petrochemical research organization in New Jersey with experience in developing custom web and scientific laboratory applications. He currently serves on the ACGNJ Board of Directors as President and has facilitated the monthly ACGNJ Java Users Group since 2001. Mike's technical experience includes object-oriented design and analysis, relational database design and development, computer security, C/C++, Java, and other programming/scripting languages. He has conducted seminars at TCF since 1998 and has co-authored articles with Barry Burd for Java Boutique. Mike has a B.S. in Computer Science from Rutgers University.

Room PHY128 (see 'Detailed Schedule' below for lecture, practice exam & exam times)
Ham Cram 101: (Amateur Radio Preparatory Cram Course & License Testing)
George Holubec, David Sarnoff Radio Club
Abstract: If you wanted to get an amateur radio license but never had the time, now is your opportunity! The FCC has changed the rules so that Morse code proficiency is not required. To obtain the entry-level Technician license,

all one has to do is pass a multiple-choice exam. With a Technician Class License, one may participate in Amateur Radio and enjoy privileges for operation on the HF amateur bands, use of VHF & UHF repeaters, participation in local Amateur Radio Emergency Services (ARES), the annual American Radio Relay League (ARRL) Field Day, and many other activities. We will be holding two 50 minute "HAM CRAM 101" sessions (at 10:00 and 11:00 am) and a practice exam (at 1 pm). The course will provide participants with an overview of the requirements needed to pass the FCC Technician License exam. As a "cram" course, there is no time to delve into details, but we plan to cover the major points that are likely to appear on the exam. The format is similar to a guided study hall, and proctors will be available to answer questions about the exam material. At 3:30 pm the FCC examination will be given by ARRL-certified Volunteer Examiners (VEs). One does not have to attend the HAM CRAM 101 or pay for admission to TCF to attend the exam session. An exam fee ($15.00) must be paid by each examinee. Two forms of identification (at least one must have your photograph) will be required to take the exam. All license exams will be offered (Technician, General and Extra) at this testing session. If upgrading, bring an original and photocopy of current license. Results of your test will be provided after exam session is completed.

DETAILED SCHEDULE FOR HAM-CRAM in Room AR1541

- Cram Lectures, 10:15 am – 11:05 am and 11:15 am to 12:05 pm
- Practice Exam, 1:00 pm – 2 pm
- Exam Session, 3:35 (immediately following the key note address)

11:20 am to 12:15 pm

Room AR154
Microsoft Office 2013
David Soll, Omicron Consulting
Abstract: At the end of January, Microsoft released its newest version of its Office Suite. This new suite, which includes Word, Excel, PowerPoint, OneNote, Access, and more, is available in both a "thick client" (or traditional version) and as a hosted or "Cloud" version. The release of Office 2013 also marks the first time that Office can now be purchased on a lease basis rather than an outright purchase. David Soll will demonstrate the new version of Office as well as discuss the various options that Microsoft has provided in purchasing the new software suite. He will also discuss the changes from the previous versions of Office as well as information regarding to Microsoft's statements as to the future of the suite.
Bio: David Soll is the CTO and President of Omicron Development, LLC. He is responsible for the overall technical direction and technology solution set provided by Omicron. David received a BS in Electrical Engineering from Drexel University and has been working in Information Technology for over 25 years, more than 20 of them with Omicron. He is currently the Vice-Chair of the Princeton Central Jersey chapter of the IEEE Computer Society and is a senior member of the IEEE. David is also the past Chairman and current board member of the Princeton chapter of the ACM and a senior member of the ACM. David has a long history of innovation working with Microsoft. He has worked with virtually every version of operating system that Microsoft has produced and has given many presentations on them. He received a prestigious IEEE Region 1 Award from technical contributions to information technology. He also is the founder and current chairman of the IEEE/ACM Information Technology Professional Conference held in conjunction with TCF.

Room PHY117
Risk-based Security management in a Compliance-driven Culture
Shahid N. Shah, TBA
Abstract: TBA
Bio: TBA

Room AR144
A Robot Conductor
Teresa Nakra, The College of New Jersey
Abstract: The "Conducting Robots" project at TCNJ is a platform for teaching interdisciplinary teamwork and creative problem solving to undergraduate students in Engineering, Interactive Multimedia, Music, and the Sciences. Students work collaboratively to design and build human-scale robots and abstract animations that conduct the TCNJ Orchestra at the end of each semester. The students develop expertise in building real-time systems that

perform functions in music listening, pitch and tempo estimation, beat tracking, emotion/gesture generation, and score following. The student-designed and built robots interact directly with musicians, and receive feedback that is then applied toward iterative design and revision of the musician-robot interaction. This work was partially funded by a Creative IT grant from the National Science Foundation. Further information can be found at http://www.tcnj.edu/~nakra/ConductingRobots.html.

Bio: Teresa Nakra, Associate Professor of Music at TCNJ, is an expert in Music Technology, HCI, Music Perception, and Affective Computing. Her interactive conducting experiences have been showcased in museums, music festivals, and concert halls. Her work was profiled in the New Yorker Magazine, the New York Times, CNN Headline News, BBC World Service, and the Associated Press. Teresa founded and runs Immersion Music Inc. She earned a B.A. at Harvard and a PhD. from MIT.

Room AR148

OS X Mountain Lion

Dave Marra, Apple Inc.

Abstract: The world's most advanced desktop operating system gets even better. Packed with over 200 innovative new features, OS X Mountain Lion includes iCloud integration, for keeping everything up to date across all your devices and for easy set up of your Mail, Contacts, Calendar, Messages, Reminders and Notes; the all new Messages app, which brings iMessage to the Mac; Notification Center, which streamlines the presentation of notifications and provides easy access to alerts; system-wide Sharing, to easily share links, photos, videos and other files quickly; Dictation, to dictate text anywhere you can type; AirPlay Mirroring, an easy way to wirelessly send what's on your Mac to an HDTV using Apple TV; and much, much more! Discover OS X Mountain Lion today!

Bio: See at 10:15 am

Room AR102

TCNJ Solar Boat

Travis Wardlow, Manthan Kothari, Kyle Orr, Thomas Burns & Brian Graham; The College of New Jersey

Abstract: TCNJ Solar Boat is designed and constructed by a team of TCNJ engineering students for the *Solar Splash* International Intercollegiate Competition, hosted by the IEEE. The boat must incorporate engineering components such as hull, propeller, steering and telemetry design as well as power management. The goal is to produce a boat to compete in various events and to achieve the highest possible score. The TCNJ team has historically performed very well on both a national and international level. This talk will discuss and show the 2013 entry.

Bio: Tyler Wardlow is the computer engineer on the team, responsible for the power system and telemetry. He is a senior and President of the TCNJ IEEE Student Branch. Other team members are Manthan Kothari, Kyle Orr, Thomas Burns and Brian Graham.

Room AR114

Updated Guide to Best Web Sites & Search Engines

Eva Kaplan, Computers + Kids Camp/Pennington Computer School/Chromotherapy for the Digital Age

Abstract: Still passionate about discovering the best sites to connect to on the Internet, TCF's Web Guru will cover an expansive diversity of new recommendations. While her emphasis will continue to be highly informative, interactive, and visually stimulating sites in all academic areas, the arts, the sciences, and literature, Eva will also be keying in on the boom in "networking" sites. She will include those networks centered on research sharing and professional connectedness. On a more erudite side, she has uncovered Internet archives such as **http:openlibrary.org** where, for example, you can secure a way back edition of Beowulf translated out of Old English or an early edition of Bronte's Wuthering Heights – both with audio versions able to be loaded... well over a million books! Then there are gaming sites that surpass game machines. As usual, this is a must attend TCF seminar.

Bio: Eva Kaplan has been with TCF since 1976. During her 30 years as the founder/director of Computers + Kids, her approach has epitomized the concept of today's STEM. Eva has been a school IT administrator, given professional development courses, and has been a consultant to schools - especially in using computers for both G & T and special needs education. Eva will be introducing her upcoming website - a must to connect with when up and running. Contact: evalkaplan@cs.com.

Room PHY116
Homebrew Projects
George Heron, New Jesery QRP Radio Club
Abstract: This talk describes some of the exciting homebrew projects developed by the NJQRP Club and built by this members at monthly meetings. Many of these projects involve digital/computer electronics as for example a standalone embedded platform for software defined radio (SDR) reception of weak signal digital communication (JT65A).
Bio: George Heron, N2APB, is an avid homebrewer in RF and digital circuits, with special interests in DSP and microcontroller applications to small signal communications (QRP). Design accomplishments include the SDR-Cube transceiver, the NUE-PSK Digital Modem, the Micro908 Antenna Analyzer, the DDS-60 Daughtercard, and other QRP kits. He co-leads the New Jersey QRP and has previously edited/published Homebrewer Magazine.

Room AR106
Arduino Workshop (all day) continued - see 10:15 am

12:25 pm to 1:20 pm

Room AR124
Internet Job$$$
Donald Hsu, Dominican College
Abstract: Apple, Disney, Expedia, Google, Linkedin, Oracle and Sprint stocks are up. Yes, the economy is back. Retires are going back to work! Eighty percent of people have jobs from Internet. Accounting needs 2.1 million by 2019 (Forensics, QuickBooks, PeachTree, MS Dynamics); application developers (C++, Java, C#) - thousands of jobs, but no applicants; cloud computing (Amazon, IBM, MS, Salesforce, VMWare, Virtualization); database (MySql, MS Sql server, Oracle 11g, SAP, Sybase, Data Warehouse), starting at $85,000; networking (Cisco, Info Security, A+, Network+, CIEE, CISSP); systems (Unix, Linux, Window 7/8); business intelligence (Project Manager, Global Finance, sales/marketing of tech product/service). Computer majors are down 50 to 80% in US universities. This means more jobs for you and me. Bring a resume and get a free critique from the speaker.
Bio: See 10:15 am Room AR154

Room PHY117
Identity Management as an Enabler for Humanitarian Assistance and Disaster Recovery Operations
Adam Firestone
Abstract: TBA
Bio: TBA

Room AR144
LEGO MINDSTORM Robotics
Douglas Ferguson, ACGNJ
Abstract: LEGO Mindstorms is a robotics platform based on the well known LEGO building sets. Doug will present an introduction to using the set and a demonstration of LEGO Mindstorms using the included software and Microsoft's Robotics Studio.
Bio: Doug Ferguson is a Principal Support Engineer for the Advanced Software Division of EMC supporting a variety of network management products. He is also a computer hobbyist who loves learning about new technologies. Having taught himself to program in high school, he continues to explore numerous areas of computers including video editing, web design, visualization, and robotics. He is the "Network Czar" of his local church, Bethlehem Evangelical Free in Randolph, NJ. Doug has been a presenter at TCF since 2002.

Room AR148
iBooks, Textbooks & Authoring
Dave Marra, Apple Inc.
Abstract: Discover how iPad is changing the learning landscape with iBooks Textbooks for iPad, iBooks Author, and iTunes U. First, with iBooks on iPad, we'll experience an entirely new kind of digital textbook that's dynamic, current, engrossing, and truly interactive. Next, we'll explore iBooks Author, a free app to create and publish

amazing Multi-Touch textbooks for iPad. Finally, we'll learn about iTunes U, to design and distribute complete courses for iPad, featuring audio, video, books, and other educational content.
Bio: See at 10:15 am

Room AR102
Ultra-Low Power Sensor Communications using Energy Harvesting
Joe Jesson, Joseph E Jesson PC
Abstract: The latest digital transceiver parts from Silicon Labs, TI, and other companies are now offering very useful (and very cool) development systems packaged with tiny photovoltaic, piezo, or thermal power generators. Joe Jesson will discuss and demo some of these self-powered wireless remote sensors.
Bio: Joe Jesson is currently CTO for XACT Technology and a recognized wireless global expert. While CTO for GE AI, he was a 2007 GE Award Winner. He is a frequent speaker on emerging M2M/Telematics and the Internet-of-Things (IOT) Technologies.

Room AR114
Google, Bing and Solr: How Do Search Engines Work?
Mark Streitman, Evolutionary Thought, LLC
Abstract: Google is one of the greatest inventions of our age. The search engine can point us to web sites that try and answer almost any question or get information about anything or anyone including you and me. How does it work? What do we know about Google? But more importantly, how can I have my own search engine? This talk will attempt to demystify search engines and answer these questions. We will also explore and demo an open source search engine called Apache Solr. Most of the search engine concepts are incorporated into Solr and so by understanding it, you will see how Google works.
Bio: Mark Streitman is software architect and professional speaker. He designs and implements real-time business engines for search and other customized needs. Mark speaks on business technology. His latest is *Getting Business Presentations Right, because so many get it Wrong*. He created the world's first Portable Foucault Pendulum. Mark has also achieved an advanced certification in Toastmasters, is President of the New Jersey Society for Amateur Scientists and is an excellent cook and chess player.

Room PHY116
SATCOM on the Move
Andrew Iepson, Kevin Christman, Liz LiSooey & James Murduca; The College of New Jersey
Abstract: A low-profile solution is needed for satellite communication while on the move. The TCNJ SATCOM on the Move Project is developing an improved antenna system that allows communication with a satellite at microwave frequencies from a moving vehicle. A major part of the project is creating a tracking system and software for keeping the antenna pointed at the satellite at all times. This system will be the main focus of this talk. This work is part of a TCNJ senior project.
Bio: The SATCOM on the Move team consists of Andrew Iepson a senior electrical engineering major and project manager, Kevin Christman a senior computer engineering major, Liz LiSooey a senior mechanical engineering major and James Murduca a senior mechanical engineering major.

Room AR154 (12:25 pm to 4:35 pm)
Building Apps for the New Windows Store
David Isbitski, Microsoft 5000+
Abstract: An overview of the new app platform in Windows 8 that enables developers to sell apps in the Windows Store. Topics include designing with the Microsoft Design Style, over of the new Windows RT APIs, and tips on using the Developer Tools. This course will also cover developing a Windows Store app with HTML and JavaScript, the same languages used to build web apps today, and how it can easily be used in Windows.
Bio: Dave Isbitski is a Technical Evangelist for Microsoft focused on Windows 8 and Windows Phone. He enjoys talking about technology and has taught full-day courses on Microsoft topics as well as being a presenter at many community events. Dave can be found online at his blog http://blogs.msdn.com/davedev and twitter @TheDaveDev.

Room AR156
OOP University: Introduction to C++
Michael Redlich, Amateur Computer Group of New Jersey

Abstract: This seminar is an introduction to the C++ programming language. C++ is an Object-Oriented Programming (OOP) language created by Bjarne Stroustrup at AT&T Labs. Since knowledge of OOP is vital in the development of robust applications, the OOP paradigm will be introduced along with a brief discussion of the advantages of OOP over structured programming. Some C++ keywords will be reviewed before introducing the C++ class mechanism. A small, working C++ example will be reviewed to demonstrate how the attributes of OOP are utilized within C++ classes. [Prerequisite: Working knowledge of a structured programming language such as C, FORTRAN, or Pascal.]
Bio: See at 10:15 am

1:30 pm to 2:25 pm

Room AR154
Operating a Small Business or Enterprise Entirely in the Could
James Mikusi,Web-Kong.com
Abstract: Building and managing a technology infrastructure is far from a necessity with the current generation of cloud solutions, most specifically the Office 365 Cloud offered by Microsoft. Customized solutions and applications may still required in-house systems, but when it comes to email, file storage, and collaboration tools it's extremely difficult to build a solution as robust and cost effective as Office 365. Requiring no upfront capital expenditure to buy servers and licenses, the cloud delivers quick and easy entry to an enterprise toolset whose costs can be scaled up or down as your business grows or downsizes. This presentation will center on the Microsoft Office 365 Cloud. It will cover small business deployments operating entirely in the cloud as well as enterprise hybrid deployments where an on-site Active Directory is synchronized with the cloud. The latter permits larger organizations to gradually migrate to the cloud, or maintain a hybrid system. The talk will cover deployment and management as well as the collective suite of utilities provided by Exchange Online, SharePoint Online, and Lync Online. Some attention will also be given to the Windows InTune solution for desktop management from the cloud.

Bio: I am the owner/operator of Web-Kong.com, an Information Architecture and IT consulting resource for small businesses. We focus on productivity and efficiency-oriented solutions to maximum the benefit from the IT infrastructure. While we offer full spectrum solutions, we are GNU/Linux advocates and solution providers.

Room PHY117
The roles of Human-Human Interfaces when producing Human Interfaces
Richard Herring, TBA
Abstract: TBA
Bio: TBA

Room AR144
Robotics – an Introduction
Orlando Hernandez, TCNJ
Abstract: Robotics is the science and technology of robots, their design, manufacture, and application. It requires a working knowledge of electronics, software, and mechanics. Before the coining of the term robotics, there was interest in ideas similar to robotics (namely automata and androids) dating as far back as 400 BC. Robotics are used in industrial, military, exploration, home making, and academic and research applications. Although the appearance and capabilities of robots vary vastly, all robots share the features of electronic sensors, and a movable structure under some form of autonomous electronics, computer, and software control. This presentation introduces the element of robotics with examples of uses and future trends. It is further enhanced through many multimedia based examples of the state of the art and further directions of research.
Bio: Orlando J. Hernandez received the Ph.D. degree in electrical engineering from Southern Methodist University. He is currently an Associate Professor and Chair of Electrical and Computer Engineering at The College of New Jersey. He was with Texas Instruments and Maxim, where he held positions in design and design management. His research interests include color image segmentation and retrieval, computer vision, image processing, and high-performance specialized VLSI architectures to perform these tasks.

Room AR148

iLife: Photos, Movies, Music & More!
Dave Marra, Apple Inc.
Abstract: Rediscover creative new ways to work with digital photos, movies, music and more with iLife for Mac and iPad! The brand new iLife suite features exciting new updates to iPhoto, iMovie and GarageBand, all with features specifically designed for education. In the classroom, over the internet or as part of a dynamic presentation or podcast, iLife offers exciting new digital content creation tools that are powerful, fun and easy to use. Explore iLife today!
Bio: See at 10:15 am

Room AR102
Latest Technology in Console Computer Games
Roger Amidon, DX Computer Company
Abstract: The world of video games has been evolving lately due to the abundance of smartphones with the computing ability to compete with the hand held computer gaming systems of just a few years ago. Think "Angry Birds". For serious gamers, the dedicated console is still king, with XBOX, SONY and Nintendo at the forefront. We will demonstrate Nintendo's latest entry: The "Wii-U". Finally, Nintendo now has a full HD 1080p video platform - and we can't wait for the next Zelda developed for that machine! We will also discuss the convergence of video games with robotic warfare systems. In the future, might we have our own personal "Drones" to protect us from evil? Will our police force be using robotic drones to watch over certain areas of the big city? Stay tuned...
Bio: Roger has been giving a talk every year of the Trenton Computer Festival and, along with his sons and nephews, has been involved with video games since 1990. Although not currently actively developing games, he still maintains a strong interest in the technology.

Room AR114
Learn the Tools to Keep Your Computer Bug Free
Robin Kessler, R&D Internet Associates
Abstract: This seminar will tell you on how to keep your computer and yourself safe on the Internet. What is the best antivirus/antispyware program to use. How to surf the Internet without getting into trouble. Why it is important to backup your documents, and the best way to do this. Tips and Tricks using Windows 8 and Office 2010. I will be raffling off FOR FREE a full version of Malwarebytes, and Superantispyware Pro Software, Second Copy Backup Program. I will also raffle off a full version of Microsoft Office 2010 Pro and Windows 8 Pro Upgrade.
Bio: I have developed programs to help members of my community enter the 21 century and understand how computers affect their lives. I have accomplished this by teaching and giving seminars on how to use a computer taking away the fear of the unknown. I work with various companies to test software and operating systems prior to their release to the public. I have been able to accomplish this using my association with R&D Internet Associates, a company that repairs, helps clients purchase computers, and teaches clients how to use their computers. Most of my clients are in the 48+ range. I give Beginner Classes and Seminars on learning how to use Windows 7 and now Windows 8 to various organizations in and around Central NJ. I also give seminars at Libraries, Adult Committee Centers, Non Profit Organizations and Businesses on how to protect your computer.

Room PHY116
Build a Wireless Access System
Douglas Ferguson, ACGNJ
Abstract: Doug Ferguson will describe how he provided public WIFI access to his church and enabled easy access for church employees to the work network using open source software (pfSense). His presentation will explain how he used VLAN, multi-SSID, and virtualization to build this system for less than $1000.
Bio: See at 12:25 pm, Room AR144

Room AR106
Arduino Workshop (all day) continued - see 10:15 am

Room AR1540
Advanced C++
Michael Redlich, Amateur Computer Group of New Jersey
Abstract: This in-depth seminar will cover some of the advanced features of C++. Four main topics will be

presented: overloaded operators, templates, exception handling, and namespaces. Each of these topics will be individually discussed and sample code will be reviewed to demonstrate how each feature is implemented. There will also be a brief introduction to the Standard Template Library. [Prerequisite: Working knowledge of fundamental C++.]
Bio: See at 10:15 am

2:35 pm to 3:30 pm

Featured Keynote Speaker: Frank O'Brien, Solar Systems Ambassador for NASA's Jet Propulsion Laboratory will speak on, **"Roving Robots on Mars: The Journey of Curiosity"**
Room: Physics-101

3:40 pm to 4:35 pm

Room AR154
Introduction to Windows
David Soll, Omicron Consulting
Abstract: Microsoft's latest operating system, Window 8, provides a vast departure from all previous versions of Windows. Microsoft has chosen to redesign the user interface from the ground up in order to support a wider array of devices such as PC's, Tablets, and Smart Phones. This drastic change means a change in how the operating system is used and how it integrates into other applications now that the "Cloud" is so prevalent.
David Soll will demonstrate and talk about Windows 8, its plusses and minuses. He will discuss what "Cloud" integration means to you and the variety of editions of Windows 8. This talk is designed to help the attendee better understand if a move to Windows 8 at this time is worthwhile or if you should continue with a previous version of Windows.
Bio: See at 11:20 am

Room PHY117
Social media integration & Analytics
Siva Krishnajee, TBA
Abstract: TBA
Bio: TBA

Room AR144
Automated Fire Fighting Robot
Robert Richardson, Devon Hall, Julianne Rudmann, Matthew Lubaszka and Christopher Graf, TCNJ
Abstract: This talk will discuss design, building and test of a robot capable of extinguishing building and basement fires and effectively replacing a firefighter in highly dangerous situations. The robot will allow for firefighters to not only put out a fire remotely, but allow rescuers to scout a burning building before sending any firefighters inside. The implementation of this robot will increase the safety of firefighters and therefore help mitigate deaths from unsafe conditions. The robot is controlled by an operator via wireless remote control. The operator will have visual feedback from the robot through the use an onboard camera with normal imaging and infrared imaging for low light situations. While the robot design will be as robust as possible, the main goal is a proof of concept. The design of the robot has been separated into several major components: the mobility base, the extinguishing system, the frame, the base station, and internal control. Size and weight constraints were determined utilizing the New Jersey Building Codes and the weight of a fully equipped firefighter. Torque, gear ratio, and current load calculations were performed to size components. Multiple design options were investigated for each component of the robot. The final designs were chosen based on effectiveness, practicality, and available resources. Ultimately, the robot should have full mobility on flat and inclined surfaces and have the ability to traverse a staircase. The robot should be able to fully extinguish a test fire in a safe a controlled manner, while sending visual feedback to the operator.
Bio: Robert Richardson, Devon Hall and Julianne Rudmann are senior mechanical engineering majors at TCNJ. Matthew Lubaszka and Christopher Graf are senior computer engineering majors at TCNJ.

Room AR148

iWork: Impressive Docs, Spreadsheets & Presentations

Dave Marra, Apple Inc.

Abstract: Discover how easy and fun word processing, spreadsheets and presentations can be with iWork. The iWork productivity suite includes Pages, Numbers and Keynote for both Mac and iPad, so you can create a document on one device and edit it on another. Also discover iCloud, to store your music, photos, documents, and more and wirelessly push them to all your devices. Explore iWork today!

Bio: See 10:15 am

Room AR102

From Morse Code to Angry Birds: A Walk Through the History of Mobility and Mobile Data

Lou Judice, The Round Mountain Group, LLC

Abstract: It's widely believed that the mobile web will soon be play a bigger role in people's live's than the fixed wired Internet. In many places that's the case already. Take a moment to look at how we've come so far, so fast with a technology that was nonexistent a few years ago, and now so common place as to be taken for granted that it's almost a crisis when it goes down.

Bio: Lou Judice is founder of The Round Mountain Group LLC, a consulting organization that helps clients deal effectively with the web, mobile web and social media. At Hewlett-Packard he was part of the team that helped incubate new mobile applications and build the world's first mobile website. He also managed Internet and Mobility marketing for HP. Previously he held technical and managerial positions with Digital Equipment, RCA Labs and General Electric.

Room AR114

TCF: A Progress Report

Allen Katz, TCNJ

Abstract: This talk will review TCF's 38 year history, and report on its present status and prospects for the future. Pictures will be shown from the first and other notable TCFs including TCF2012. Audience participation with be encourage and suggestions on how TCF can be improve solicited.

Bio: Allen Katz is a professor of Electrical/Computer Engineering at The College of New Jersey. He is co-founder of the Trenton Computer Festival and has been the festival's director for more than 20 years. He has more than 25 years of experience in the microwave, satellite and computer industries. He holds 17 patents and has written more than 100 technical publications. He is founder and President of Linearizer Technology, Inc. He has been a licensed Radio Amateur since 1956. He received the ARRL Technical Merit Award in 1976, the John Chambers Award in 1982, an IEEE Centennial Medal in 1984, the Martin Marietta Astro Inventor of the year award in 1993, and in 2002 the William Randolph Lovelace II Award for outstanding contributions to space science and technology. He is a Fellow of the IEEE.

Room PHY116

SEPS (Smart Electric Power System) Lab

Anthony Grullon & Richard Schoonewolff, TCNJ

Abstract: This talk will discuss smart electric power systems (SEPSs) and discuss work by TCNJ students to manipulate the parameters and topology of a physical power system and observe the resulting effect on efficiently. The teams' objective is to design and implement a master data acquisition and control station for SEPSs, and will include an easy to use graphical user interface, and an algorithm to facilitate a two-way Internet communication between data acquisition devices using the Lab-view graphical programming language. The Instrumentation and simulation software as well as the hardware controllers (micro controllers, digital circuits and relays) to allow actuation and control between modules will be presented. This work has both commercial potential and value to electric power education.

Bio: The SEPS team consists of Anthony Grullon a TCNJ engineering management major with a specialization in electrical engineering and a minor in computer engineering, and Richard Schoonewolff a TCNJ Computer Engineering major

Room AR106

Controlling the World with Arduino

Paul Bergsman, N3PSO, Author and Independent Consultant

Abstract: Embedded Controllers were for many years implemented using First Microchip's PICs, then Parallax's Basic Stamps were popular, now it's Arduino Products turn. If you are looking for an efficient method of introduction to working with micro-controllers, then Arduino is the answer. Using a short video, and "show-and-tell" examples, Paul Bergsman will introduce you to Arduino's world of sensors, data logging, and robotic control.
Bio: Paul Bergsman, now retired, taught Industrial Arts Technology in the Philadelphia public schools for twenty seven years. Along the way, he obtained a U.S. patent for a unique electro/mechanical lock cylinder, authored a book, ("Controlling The World With Your PC") about interfacing motors, lights, and sensors to a computer's parallel printer port, which remained in print for ten years. His latest interest is the Arduino.

Room AR1540
Introduction to OOP Design Principles
Michael Redlich, Amateur Computer Group of New Jersey
Abstract: Object-Oriented Programming (OOP) is a programming paradigm that models real-world objects. The most well-known and widely-used OOP languages are C++ and Java, but some languages, such as Simula-67, were around much earlier. The advantages of OOP over structured programming include modularity and code re-use. As OOP has evolved over the years, things like design patterns and design principles have guided developers to write applications that are more adaptable to modification. This presentation will introduce OOP, its basic attributes (encapsulation, abstraction, inheritance, and polymorphism), the class mechanism, and some design principles that have led to the development of design patterns. Example C++ and Java source code will be reviewed to demonstrate the features of OOP and design principles.
Bio: See 10:15 am